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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/805,854	03/22/2004	John Lamotte	27500-GN03014	3013
7590				
05/14/2008				
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ART UNIT		PAPER NUMBER		
1792				
MAIL DATE		DELIVERY MODE		
05/14/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/805,854

Applicant(s)

LAMOTTE ET AL.

Examiner

DAVID TUROCY

Art Unit

1792

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 April 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-228 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-209 and 226-228 is/are rejected.
- 7) ☒ Claim(s) 210-225 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. Applicant's amendments, filed 4/8/2008, have been fully considered and reviewed by the examiner. The examiner notes the amendment to claim 1, 17-20 and the addition of new claims 226-228. In view of the amendment to claims 17-20 the 35 USC 112 2nd paragraph rejection has been withdrawn. Claims 1-228 are pending in the instant application.

Terminal Disclaimer

2. The terminal disclaimer filed on 4/8/2008 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of UPN 7141135 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Response to Arguments

3. Applicant's arguments filed 4/8/2008 have been fully considered but they are not persuasive.

The applicant has argued against the GB '800 reference, stating that the discloses forming a deposited film in a single pass to achieve a thickness of 500-600 angstroms, and that a thicker coating is applied the device would not function as intended. The examiner can not locate any disclosure to support such a statement. Specifically, GB '800 discloses thicker coatings provide various other benefits, including

color, depending on the thickness. Therefore GB '800 clearly discloses thicker coatings are operable and achievable using the process as claimed.

As for the added limitation into claim 1, successive steps, such is unclear and the examiner can not determine the mete and bounds of such a claim limitation. It appears as though the applicants require successive steps to be equivalent to multiple deposition passes which provides a thick layer of high quality, however, successive steps is not as limiting. Therefore, giving the term its broadest reasonable interpretation, it is clear that GB '800 discloses successive steps of depositing, particularly, the film is depositing on a running web, therefore the entire coating can be broken up into steps corresponding to length of the running web. Specifically, the first portion of the web is coated in a first step, as the web moves, a second portion further down the web from the first portion is coating in a second step, etc. for a seemingly infinite number of successive steps occurring to form the coating of the phosphor.

Alternatively, the examiner notes GB discloses depositing a layer with a thickness and therefore such a deposition will inherently be successive steps. Specifically, the first angstrom is deposited followed by a second angstrom, then a third angstrom. These are successive steps in the formation of a full layer of a finite thickness.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., multiple deposition passes which provides a thick layer of high quality) are not recited in the rejected claim(s). Although the claims are interpreted in light of the

specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

The applicants argue against the combination of GB '800 and EP '458 stating that the references are incompatible because of the layer thickness and application of eventual product. As discussed above, GB '800 discloses that the coating method can be used to form thicker coatings. Additionally, the applicants have completely discounted the level of one ordinary skill in the art of vapor deposition and phosphor deposition. Adjusting the thickness for the intended use of the product, taking into consideration the desired product and the evaporant material, is well within the skill of one ordinary in the art. Specifically, the references are not taken in a vacuum and the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, it would have been obvious to one of ordinary skill in the art to have modified the process of GB '800 to deposit the material as taught by EP '458 with a reasonable expectation of success because GB '800 discloses depositing any material using evaporation method onto the support material and EP '458 discloses binderless photostimulable CrBr:Eu phosphor coating is deposited on similar support material using evaporation coating method. Also, it would also have been obvious to one of ordinary skill in the art to have modified EP '458 to

use the vapor deposition process as taught by GB '800 with a reasonable expectation of predictably depositing the binderless photostimulable CrBr:Eu phosphor coating on a support material.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Applicants have argued against US '853, arguing the reference teaches against forward and backward motion. The applicants argue the reference discloses depositing in a minimal number of passes, preferably one thereby avoiding the problems associated with stopping and reversing the web direction. The examiner respectfully disagrees. While the examiner notes the applicant is reading the requirements of the claim narrowly, the examiner notes that such is not a teaching against stopping and reversing the web direction. Specifically, a preference is not a teaching against, but rather a teaching of another method. The reference clearly discloses that it is known and suitable in the art to provide a web and pass a web by a evaporation source by successive forward and backward motions. While the reference discloses a minimizing the number of successive forward and backward motions, such minimization does not

completely elimination all forward and backward motions. In any event, the reference discloses what is required by the claim, see figures, 3, 6. This clearly shows successive forward and backward motions during the coating process. Therefore, US '853 reads on the narrow interpretation of the claim as argued by the applicant as well as a claim interpretation that gives the claim its broadest reasonable interpretation consistent with the specification.

All other arguments are directed to newly added claim amendments, that were not present at the time of the prior rejection and therefore are deemed moot and addressed in the prior art rejection that follows.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-16, 21-45, 62-89, 122-129, 130-133 are rejected under 35 U.S.C. 102(b) as being anticipated by GB 2339800 hereafter GB '800.'

Claim 1: GB '800 discloses a method for coating a phosphor layer or similar layer onto a flexible substrate , within a vacuum, which inherently is sealed (due to the nature of a vacuum), and deforming the substrate before, during and after the coating vapor deposition step (Figures, abstract page 1, 4).

As for the requirement of depositing the phosphor with "successive steps", giving the term its broadest reasonable interpretation, it is clear that GB '800 discloses successive steps of depositing, particularly, the film is depositing on a running web, therefore the entire coating can be broken up into steps corresponding to length of the running web. Specifically, the first portion of the web is coated in a first step, as the web moves, a second portion further down the web from the first portion is coating in a second step, etc. for a seemingly infinite number of successive steps occurring to form the coating of the phosphor.

Alternatively, the examiner notes GB discloses depositing a layer with a thickness and therefore such a deposition will inherently be deposited using successive steps. Specifically, the first angstrom is deposited followed by a second angstrom, then a third angstrom. These are successive steps in the formation of a full layer of a finite thickness. Such an interpretation is reasonable because the claim fails to appreciate the metes and bounds of "step" and therefore depositing the first angstrom can reasonable be a step followed in succession by the second angstrom.

Claim 2: GB '800 Discloses continuously supplying the web (figures)

Claim 3-8: GB '800 discloses coating a large sheet and using the coating for such products as a security card, decorative wrapping, etc. (page 1) and therefore the deposition will necessarily exceed the ready-for-use area by the factors as claimed.

Claims 9-16: GB '800 discloses substrate moving over one or more rollers or guiding frames (figures).

Claims 21-28: GB '800 discloses unwinding roll and winding roll (figures, page 4).

Claims 29-45: GB '800 discloses forward continuous motion through coating zone (figures and text).

Claims 62-89: GB '800 discloses using a polymer web supported by a metal coating, discloses the substrate may be paper or metal (page 4,8).

Claims 122-129: GB '800 discloses vapor deposition from a container using sublimation by radiant energy (abstract).

Claims 130-133: GB '800 discloses the phosphor layer directly on the substrate and therefore can reasonably be interpreted as binderless.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 17-20 and 226-228 are rejected under 35 U.S.C. 103(a) as being unpatentable over GB '800.

Claims 17-20: GB '800 discloses coating an even layer of a phosphor on the surface of a large substrate and discloses using such for such products as a security

card, decorative wrapping, etc. (page 1), however the reference fails to explicitly disclose cutting the substrate. However, taking into consideration the large scale of the continuous web and the foreseen applications of relatively small products, the cutting of the substrate would have been obvious to one of ordinary skill in the art, and well within the skill of one ordinary in the art, to have cut the substrate to provide the appropriate product size. All the claimed elements (cutting and phosphor web) were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

Claims 226-228: GB '800 fails to disclose depositing a layer thickness as claimed. However, GB '800 discloses the film exhibits variable colors depending on the thickness of the coating (page 7, lines 4-6). Therefore, GB '800 discloses the thickness is a known result effective variable, i.e. effecting the color of the depositing film.

Therefore it would have been obvious to one skill in the art at the time of the invention was made to determine the optimal value for the phosphor thickness used in the process of GB '800, through routine experimentation, to impart the deposited film with the appropriate and desired color.

8. Claims 130-146 are rejected under 35 U.S.C. 103(a) as being unpatentable over GB '800 in view of EP 1113458 hereafter EP '458 or visa versa.

GB '800 discloses all that is disclosed above, however, the reference fails to disclose the CrBr:Eu phosphor coating. However, GB '800 discloses the method can be utilized for the formation of various layer on a support material of paper, metal, or polymer, and EP '458 discloses vapor deposition of binderless photostimulable CrBr:Eu phosphor coating is known in the art from multiple containers in a vacuum chamber (0023-0024) and discloses deposition on supports such as paper, metal, or polymer. EP '458 discloses prompt emitting luminescent characteristics (0002). Therefore, taking the references collectively, all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention. See *KSR Int'l Inc. v. Teleflex Inc.*, 127 S Ct. 1727, 1741, 82 USPQ2d.

Alternatively, it would have been obvious to one of ordinary skill in the art to have modified the process of GB '800 to deposit the material as taught by EP '458 with a reasonable expectation of success because GB '800 discloses depositing any material using evaporation method onto the support material and EP '458 discloses binderless photostimulable CrBr:Eu phosphor coating is deposited on similar support material using evaporation coating method.

It would also have been obvious to one of ordinary skill in the art to have modified EP '458 to use the vapor deposition process as taught by GB '800 with a reasonable expectation of predictably depositing the binderless photostimulable CrBr:Eu phosphor coating on a support material.

9. Claims 90-122 are rejected under 35 U.S.C. 103(a) as being unpatentable over GB '800 in view of EP 1113458 hereafter EP '458 or visa versa and further in view of US Patent 4455323, hereafter US '323.

GB '800 in view of EP '458 or visa versa teach all that is discussed above, however the references fail to disclose a support of aluminum with a coating as claimed. However, EP '458 discloses using an aluminum support material and discloses the support material may include a subbing layer (0025-0026).¹ Additionally, US '323 discloses a process for depositing a phosphor on a support material discloses using a aluminum metal sheet and discloses polymer subbing layers improve adhesion for the phosphor (Column 5, lines 20-60), therefore the claim would have been obvious because the technique for improving a particular class of devices, methods or products was part of the ordinary capabilities of a person of ordinary skill in the art, in view of the teaching of the technique for improvement in other situations.

EP '458 discloses the support material is 60-10,000 microns, within the range as claimed. In the case where the claimed ranges "overlap or lie" inside ranges disclosed by prior art a *prima facie* case of obviousness exists. *In re Wertheim*, 541 F.2d 257 191 USPQ 90. See MPEP 2144.05.

10. Claims 146-169 are rejected under 35 U.S.C. 103(a) as being unpatentable over GB '800 in view of EP '458 or visa versa and further in view of EP 1286364 hereafter EP '364 or US Patent 4741993, hereafter US '993

GB '800 in view of EP '458 or visa versa teach all that is discussed above, however the references fail to disclose applying a organic or inorganic protective coating over the phosphor layer. However, EP '364 discloses application of a protective coating over the phosphor layer to provide moisture protection and other benefits (abstract, 0014-0024) and US '993 discloses it is known in the stimuable phosphor art to deposit a protective coating for moisture protection (abstract, column 4-5, column 10-11). Therefore it would have been obvious to one of ordinary skill in the art to have modified GB '800 in view of EP '458 or visa versa to provide the protective coating as suggested by EP '362 or US '993 to reap the benefits of moisture protection and other added benefits.

11. Claims 226-228 are rejected under 35 U.S.C. 103(a) as being unpatentable over GB '800 in view of EP 1113458 hereafter EP '458 or visa versa and further in view of US Patent Publication 20030024479, hereafter US '479.

GB '800 in view of EP '458 or visa versa disclose all that is taught above, however, they fail to explicitly disclose a phosphor film thickness. However, US '479 discloses depositing thick phosphor layers, including layers of CsBr:Eu similar to those discloses by EP '458 (0013, 0047). US '479 discloses depositing phosphor thickness of about 500 microns, which is within the range as claimed. Therefore, taking the references collectively, for all their teachings to one of ordinary skill in the art, it would have been obvious to one of ordinary skill in the art to have modified GB '800 in view of EP '458 or visa versa to deposit a CsBr:Eu film to the thickness as taught by US '479

with a reasonable expectation of successful deposition because US '479 discloses phosphor layers of about 500 microns is known and suitable in the art and GB '800 discloses the method of evaporation can be done to form a film of various layer thicknesses (Page 7).

Additionally, all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention. See *KSR Int'l Inc. v. Teleflex Inc.*, 127 S Ct. 1727, 1741, 82 USPQ2d.

12. Claims 46-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over GB '800 in view of EP '458 or visa versa in view of EP '364 or US '993 and further in view of US Patent 5460853 hereafter US '853.

GB '800 in view of EP '458 or visa versa in view of EP '364 or US '993 disclose all that is taught above, however, they fail to disclose forward and backward movement. However, the combination of references discloses forming multiple successive layer on a support material and US '853 discloses that it is known and suitable in the art to provide successive forward and backward motion to deposit layers (Column 3, figures). US '853 disclose that such modification results in better coating quality. Therefore, it would have been obvious to one of ordinary skill in the art to have modified GB '800 in view of EP '458 or visa versa in view of EP '364 or US '993 to use successive forward and backward motions to reap the benefits of better coating quality.

13. Claims 170-209 are rejected under 35 U.S.C. 103(a) as being unpatentable over GB '800 in view of EP '458 or visa versa, in view of EP '364 or US '993 and further in view of US Patent 4983848, hereafter US '848.

GB '800 in view of EP '458 or visa versa, in view of EP '364 or US '993 teaches all that is taught above, however, fail to laminate onto a carrier layer. However, US '848 discloses laminating the support film with a phosphor layer deposited thereon with what can reasonably be considered a polymer carrier layer (Example 4). Therefore it would have been obvious to modify GB '800 in view of EP '458 or visa versa, in view of EP '364 or US '993 with a the lamination process with a reasonable expectation of success because US '848 discloses that such is known and suitable in the art. The selection of something based on its known suitability for its intended use has been held to support a *prima facie* case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945).

Claims 198-201: One of ordinary skill in the art would have recognized that the lamination takes place either in the vacuum chamber or outside, but US '848 discloses such lamination protects the phosphor layer and therefore it would have been obvious to have laminated in the vacuum environment so as not to expose the substrate coated to the open atmosphere.

Allowable Subject Matter

14. Claims 210-225 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **DAVID TUROCY** whose telephone number is (571)272-2940. The examiner can normally be reached on Monday-Friday 8:30-6:00, No 2nd Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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